Energy Office
MI Department of
Consumer & Industry
Services

Survey REPORT

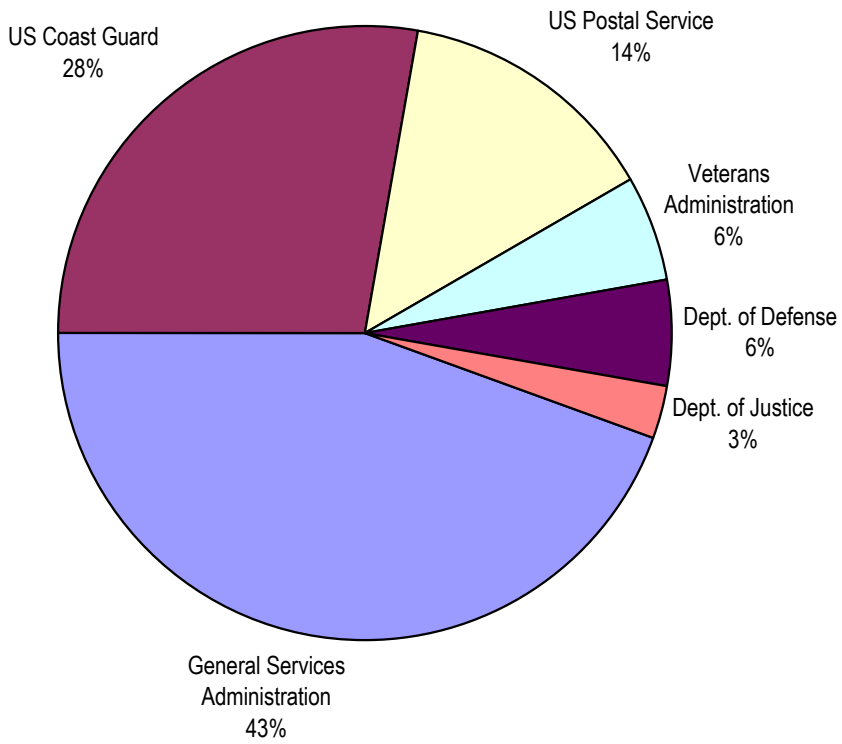
The Michigan/Federal Energy Management Program (MIFEMP) Initiative

June 30, 2001

Introduction

This report presents results of a phone survey of participant facilities in the State of Michigan/Federal Energy Management Program Initiative (MIFEMP). The purpose of the survey was simply to determine what energy efficiency actions were taken by the participating facilities after MIFEMP ended. MIFEMP operated from July 1, 1997 through September 30, 1999 and provided federal facility operators with utility bill analyses, walk-thru energy and water conservation audits, follow up visits to discuss the walk-thru audits and to present information on FEMP support services such as performance contracting, technical training for federal building operators and business managers and technical assistance to federal building operators. MIFEMP sought to increase energy and water efficiency in MI federal facilities by helping facility personnel 1) build support for implementing energy/water efficiency projects and 2) connect with Midwest FEMP managers and service providers who could provide the expertise to fully develop and implement projects. A pre-MIFEMP survey by the MI Energy Office determined that MI federal facility operators needed education and/or technical assistance in areas affecting energy consumption in their facilities.

Federal Agency Participation by Percentage of Buildings



Measuring Success

Each participant in MIFEMP was surveyed to determine if energy efficiency measures were implemented.

Of the 36 participating federal facilities, (78%) completed or planned to implement energy efficiency measures after MIFMEP while thirty-one percent (31%) implemented energy efficiency measures prior to MIFEMP participation. .

MIFEMP Participant	Measures Implemented Prior to MIFEMP	Measures Implemented After MIFEMP
Ann Arbor Federal Building	Yes	Yes
Flint Federal Building	Yes	Yes
Kalamazoo Federal Building	Yes	Yes
Lansing Chamberlain Federal Building	Yes	Yes
USPS Lansing General Mail Facility	Yes	Yes
USCG Group Grand Haven	Yes	Yes
USCG Ludington Station	Yes	Yes
USCG Grand Haven Station	Yes	Yes
USPS Flint Processing & Distribution Center	Yes	Yes
Detroit E. Grand Social Security Administration Building		Yes
Detroit Food & Drug Administration Building		Yes
Detroit Fort St. US Customs Inspection Building		Yes
Detroit Fort St. Social Security Administration Building		Yes
Detroit Grand River Ave. Social Security Administration Building		Yes
Immigration & Naturalization Services Center		Yes
Inkster Social Security Administration Building		Yes
Iron Mountain VA Medical Center		Yes
Redford Social Security Administration Building		Yes
Theodore Levin Federal Courthouse		Yes

US Army Corp of Engineers Grand Haven		Yes
USCG Frankfort Station		Yes
USCG Manistee Station		Yes
USCG Frankfort Housing Unit		Yes
USCG Holland Station		Yes
USCG Muskegon Station		Yes
USCG St. Joseph Multi-purpose Building		Yes
USCG St. Joseph Recreation Building		Yes
Detroit Wyoming St. Social Security Administration Building		Yes

The following table illustrates the TYPE of energy efficiency equipment and/or measures that were installed by federal facilities participating in MIFEMP.

Types of Energy Efficiency Equipment/Measures installed by Federal Facilities that participated in MIFEMP

- T8 lamps
- Reflectors
- High pressures sodium lamps
- Light emitting diode exit signs
- Occupancy sensors
- Repair of existing controls
- Roof insulation
- Computerized energy management system
- Energy efficient windows
- Energy efficient outdoor lamps
- Electronic ballast
- Water-saving toilets
- Energy efficient pumps
- Energy efficient motors
- Light controls
- Programmable time clocks
- Energy efficient water heaters
- Upgrade of HVAC system
- Insulated garage doors

Data from MIFEMP Walk-thru Water & Energy Conservation Audits

- $1,574,402 estimated energy efficiency investment
- $ 594,224 estimated annual cost savings
- 3,675,718 square feet surveyed
- 2.65 years average investment payback

Square footage Surveyed

Maximum - 952,560	Minimum - 1,922	Average - 102,103

Estimated Energy Efficient Investment

Maximum - $339,160	Minimum - $480	Average - $43,733

Estimated Annual Energy Cost Savings

Maximum - $129,825	Minimum - $141	Average - $16,506

Average simple payback

Maximum - 7.38 years	Minimum - .7 year	Average - 2.65 years

Moving Ahead with Energy Efficiency

- The State of Michigan Office of Purchasing included several **Department of Defense (DOD)** facilities in a State of Michigan energy performance contract for its Department of Military Affairs. The DOD facilities comprise part of the square footage of several MI National Guard Armories and are benefiting from energy efficiency measures installed that have an estimated total investment of $2,172,759 and total estimated savings of $2,375,587.

- The **Detroit Immigration & Naturalization Services (INS)** Center plans to procure 7-day, digital time clocks for facility boilers and fans. This will allow for short intermittent start-ups during facility down time to minimize energy use. The INS Center also plans to procure temperature control clocks wired in series with the digital time clocks to activate the heating, ventilating, & air conditioning (HVAC) systems based on outside temperatures.

- The **Ann Arbor Federal Building** plans to implement a modular boiler and upgrade their fluorescent lighting. – The **General Services Administration (GSA)** plans to use $40,000 to fund several less costly measures from several MIFEMP preliminary energy audit reports for GSA facilities in the Detroit area -- The **Detroit Theodore Levin U.S. Courthouse** had energy efficiency retrofits installed at a cost of $115,167 with annual savings of $26,757 providing a payback of 4.3 years. Measures included energy efficient lighting, faucet aerators, energy efficient motors, occupancy sensors and revamping of the energy management system.

- The **Iron Mountain Veterans Administration Medical Center** upgraded approximately 50% of their lighting to more efficient lamps; replaced 20% of the windows with more efficient types; and, improved their HVAC systems to be more energy efficient with upgraded motors, a computerized Energy Management System, reclaimed laundry waste heat, and boiler stack economizer.

- The **Lansing US Postal Service (USPS) General Mail Facility** plans to submit a heat recovery measure for funding that was identified in their MIFEMP report. -- The **Flint USPS Processing Distribution Center** plans to use operating funds to implement lighting measures identified in their MIFEMP report.

- The **Grand Haven US Coast Guard** used $3,230 to install Light Emitting Diode (LED) exit signs, timers, electronic ballasts and T-8 lamps at their Frankfort station; installed heat pumps, double pane windows, T-8 lamps, LED exit signs, programmable thermostats and an insulated garage door at their administration facility; and, invested $16,599 on weather-stripping at the Ludington station, water heater blankets, storm windows, insulated doors, timers for lights, water-saving shower nozzles, pipe insulation and fluorescent lamps.

Technical assistance leads to increased energy efficiency in smaller facilities. A less comprehensive and costly path can be followed from a simple walk-thru energy audit and project development assistance from outside sources such as State Energy Offices and their staff engineers. The distance between smaller sites reporting to the same agency is often too great to justify an aggregated proposal for a performance contract project that will interest an energy service company (ESCo). FEMP discovered, through their experience with performance contracting, that an ESCo will, in general, tend to shy away from performance contracting proposals with project costs of less than $1,000,000. This seems to be a relative *minimum threshold* in the industry. Thus, smaller federal facilities, such as those served by MIFEMP, need alternative support services to help realize their full potential in energy and water efficiency. State Energy Offices, such as Michigan's, prove to be viable alternative sources for technical information, training and assistance - helping smaller facilities achieve maximum energy and water use efficiency and better building comfort.